

# **Wetlands – Reservoirs of Biodiversity**

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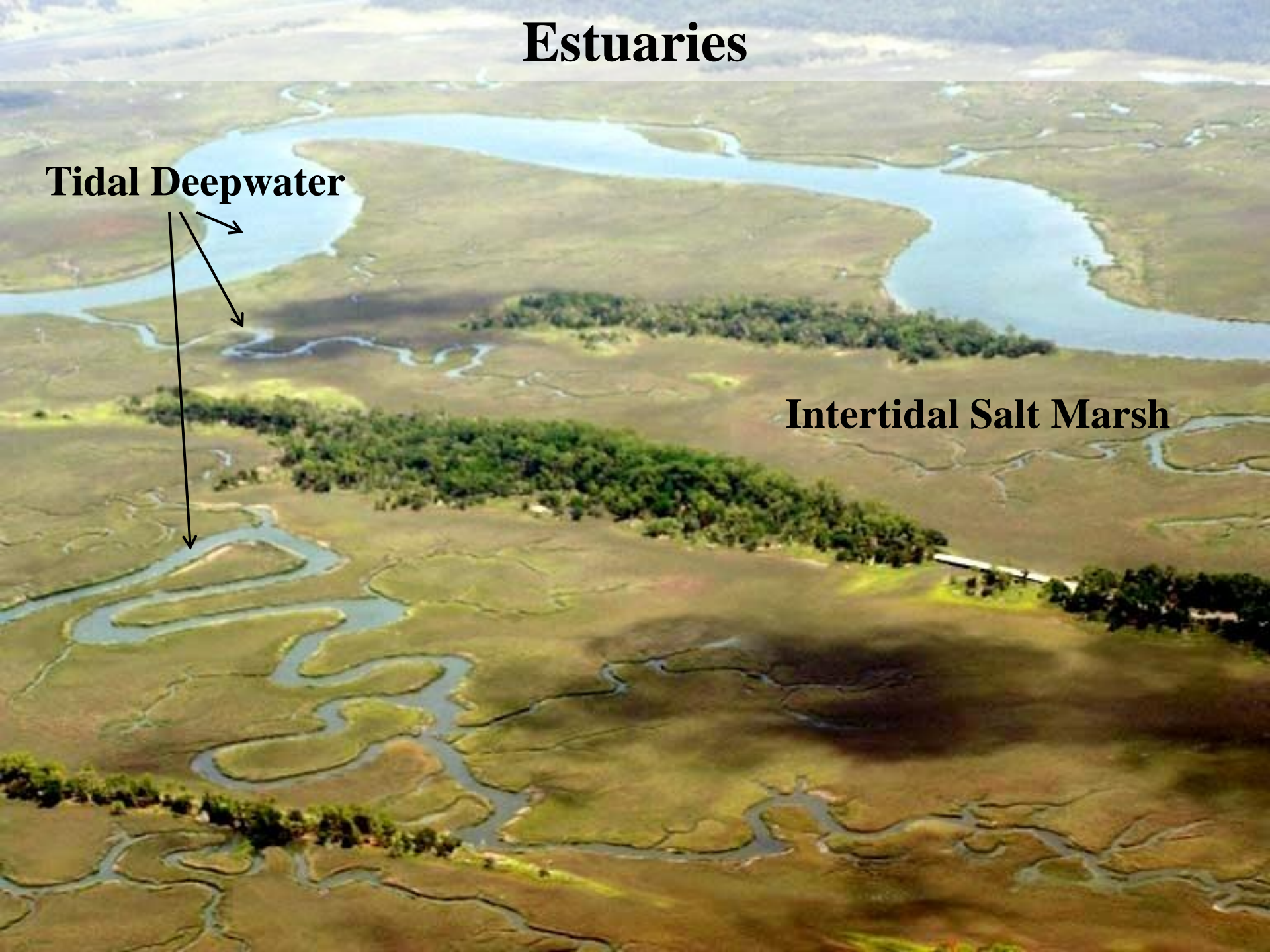


# Estuaries

**Tidal Deepwater**



**Intertidal Salt Marsh**







**Deepwater**

**Tidal Emergent Marsh**

**Tidal Riverine Fresh & Brackish**



# **Freshwater Riverine**

**Seasonally Flooded  
Swamp Forest**



**Deepwater**



# Freshwater Riverine, Oxbows & Swamp Forest

**Riverine  
Deepwater** →

**Oxbow**

**Seasonally Flooded  
Swamp Forest**





# Cypress – Tupelo Swamp Forest



**Seasonally Flooded**



# Bottomland Forest





# Fresh & Brackish Emergent Marsh





# Forested Depression Wetland





# Seasonal Pool





# Open Depression Wetlands





# Bowl Depression





# Interdune Ponds & Depressions



**Deepwater**

**Emergent Marsh**



# Carolina Bays



**1.4-mi long  
~310 acres**



# Horry County Carolina Bays





# **Carolina Bays – Internal Wetlands**

**Pond cypress depression  
with permanent pools**



**Open depression meadow  
with seasonal pools**



# **Wetland Dependent Mammals**

**(5 of 19 SC priority conservation species)**

## **Fresh, Brackish & Estuarine Wetlands**



**Northern River Otter**

- No current priority conservation status in SC; likely in need of such designation in Coastal Zone



**Mink**

- High priority conservation status in SC



# **75 Wetland Dependent Species Among 119 Priority Conservation Bird Species in SC**

## **Forested Wetland Birds**



**Prothonotary Warbler**

- Moderate priority conservation species in South Atlantic Coastal Plain
- Highest conservation priority for North America



**Acadian Flycatcher**

- High priority conservation species in SC



**Wood Duck**

- Moderate priority conservation species in SC



# 12 Wadingbirds on SC Priority Conservation List



**American Bittern**

- Highest priority conservation species in SC
- Winters in freshwater marshes



**Little Blue Heron**

- Highest priority conservation species in SC
- Nests in & near wetlands



**Green Heron**

- Moderate priority conservation species in SC
- Nests in & near wetlands



# Nest In Or Near Forested Wetlands



**Swallow-tailed Kite**

- Highest priority conservation species in SC



**Yellow-crowned  
Night-heron**

- Highest priority conservation species in SC



**Wood Stork**

- State & federal endangered species
- Highest priority conservation species in SC
- 4 rookeries



# Bald Eagle



- Nesting, resting, roosting & foraging typically associated with wetlands
- No longer protected under ESA, but similar protection under BGEPA
- High conservation priority in SC
- Approximately 30 nest sites within Georgetown and Horry Counties



# Migratory Waterfowl & Emergent Marsh



American Black Duck  
- Highest priority in SC  
- Fresh, brackish & estuarine



Northern Pintail  
- Highest priority in SC  
- Fresh & brackish



# 20 of 32 SC Conservation Priority Reptiles



## **Yellowbelly Slider**

- High priority conservation species in SC
- Permanent freshwater, alluvial & isolated



## **Spotted Turtle**

- Moderate priority conservation species in SC
- Forested freshwater wetlands



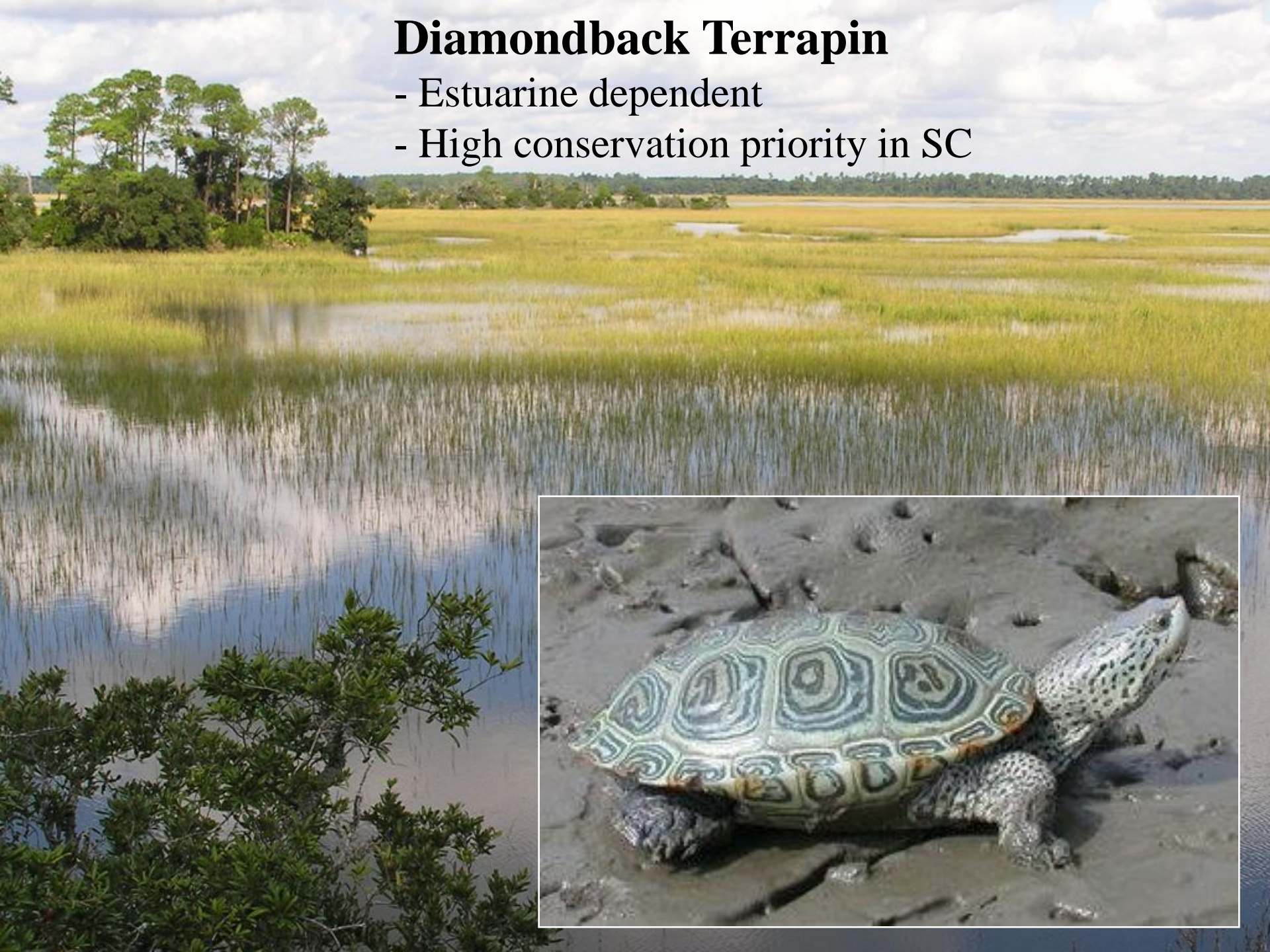
## **Common Snapping Turtle**

- Moderate priority conservation species in SC
- All freshwater wetlands



# Diamondback Terrapin

- Estuarine dependent
- High conservation priority in SC





# Amphibians – 19 SC Priority Conservation Species



**Pickerel Frog**

- Alluvial swamp forests
- High priority conservation species in SC



**Eastern Narrowmouth Toad**

- Isolated wetlands
- Generally widespread, but wetland dependent



**Tiger Salamander**

- Isolated wetlands
- Highest priority conservation species in SC



# 62 Conservation Priority Freshwater Fishes



**Atlantic Sturgeon**

- Highest priority conservation species in SC
- Protected under regional management plan
- Adults primarily deepwater fresh, brackish & marine
- Young use both deepwater & wetland fresh & brackish



**Shortnose Sturgeon**

- State & federally endangered
- Adults primarily deepwater fresh & brackish
- Young use fresh deepwater & wetland habitats



**American Eel**

- Highest priority conservation species in SC
- Many fresh, brackish & estuarine habitats



# Small Fishes



## **Carolina Pygmy Sunfish**

- State threatened in SC
- Freshwater marshes & small forested tannic acid streams



## **Mud Sunfish**

- Moderate priority conservation species in SC
- Carolina Bays, oxbows & small streams (forested)



## **Banded Killifish**

- Moderate priority conservation species in SC
- Tidal fresh & brackish wetlands (marsh)

## **Marsh Killifish**

- Similar species
- Unranked priority
- Brackish isolated pools & tidal marsh



# **Invertebrates – Many 100s of Wetland Dependent Species**



**Phantom Darner**

- Among rarest dragonflies in SC
- Isolated forested wetlands with seasonal pools



**Crayfish**

- 24 rare and uncommon species in SC
- Many species dependent upon isolated wetlands or small streams



**Rare Skipper**

- Tightly associated with fresh & brackish emergent marshes
- Primary caterpillar host –plant is wild rice



# **Rare Plants Restricted to Open Isolated Wetlands (Carolina Bays, Pine Savannas & Pocosins)**

**72 of 88 rare plants  
documented in Georgetown  
& Horry Counties are  
wetland-dependent**



American Chaffseed  
- State & federally  
endangered



Venus' Fly-trap



Sweet Pitcher-plant



# More Rare Wetland Plants



**Golden Canna**

Freshwater marshes,  
open depressions &  
creek margins



**Pondspice**

Carolina Bays &  
isolated forested wetlands



**Awned Meadow-beauty**

Open Carolina Bays &  
pond cypress depressions



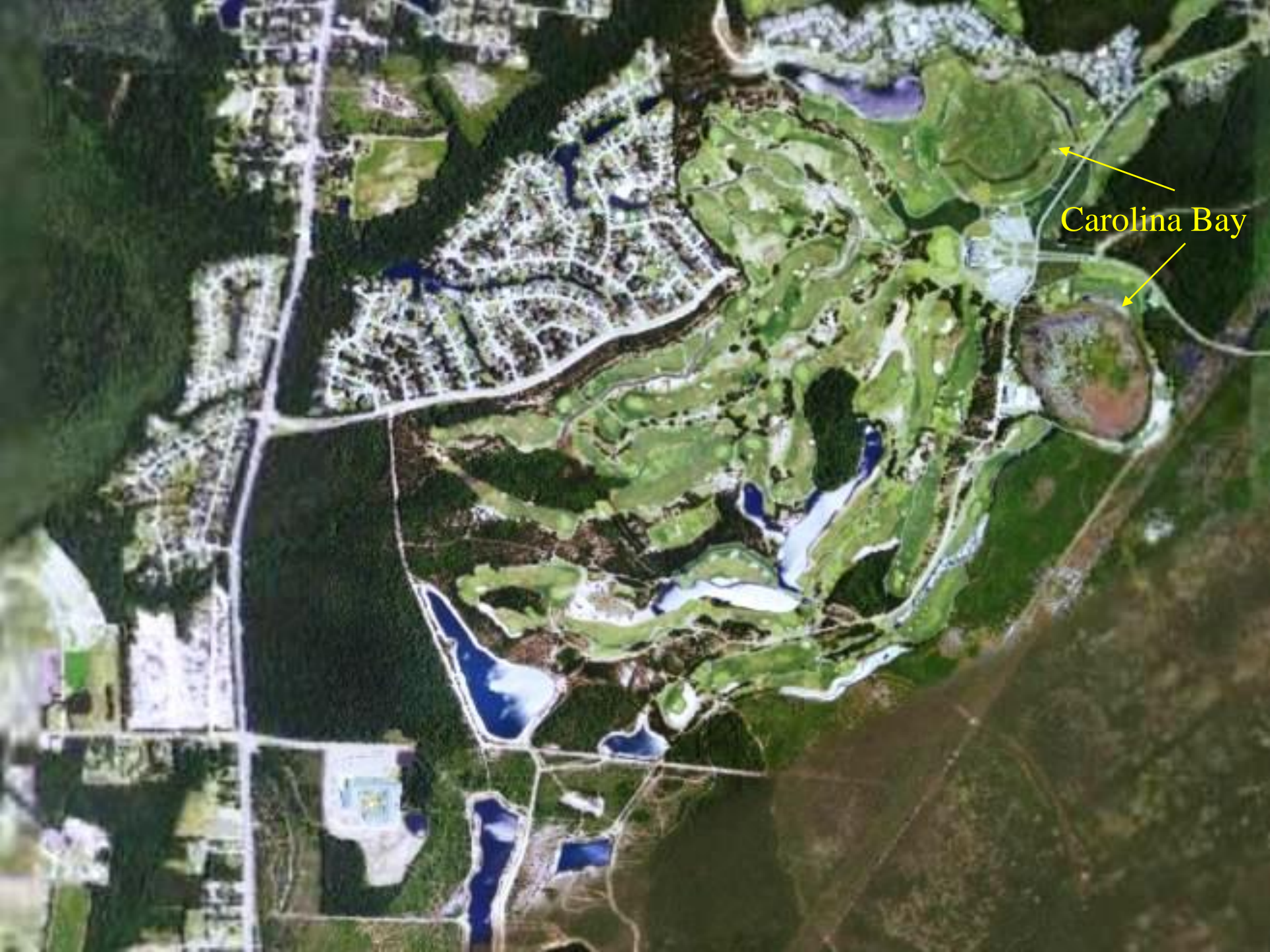
# Impacts of Man-made Ponds



Retention Pond  
8.5 acres

Natural Depression Wetland

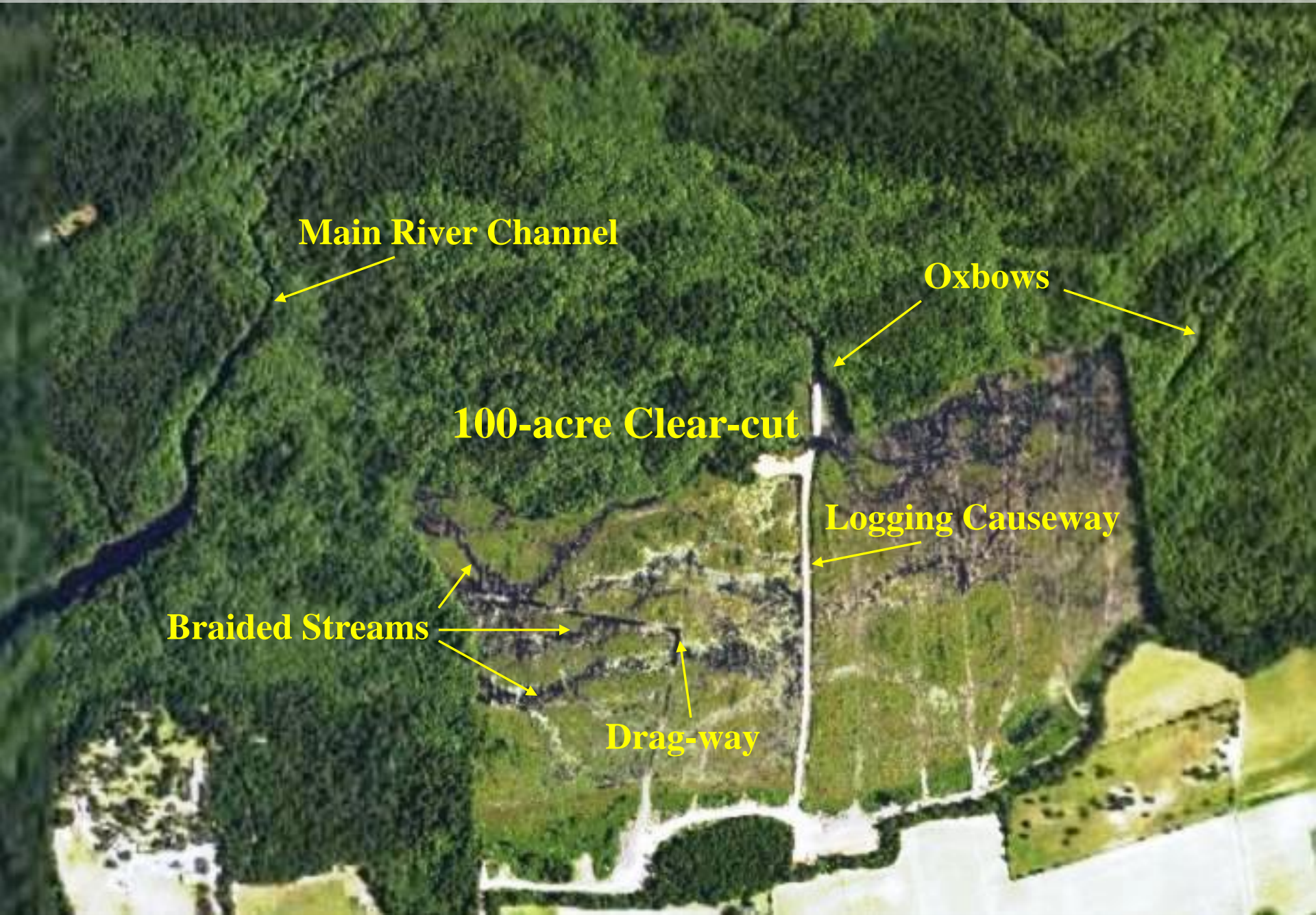




Carolina Bay



# Black River Floodplain, Clarendon County



**Main River Channel**

**Oxbows**

**100-acre Clear-cut**

**Logging Causeway**

**Braided Streams**

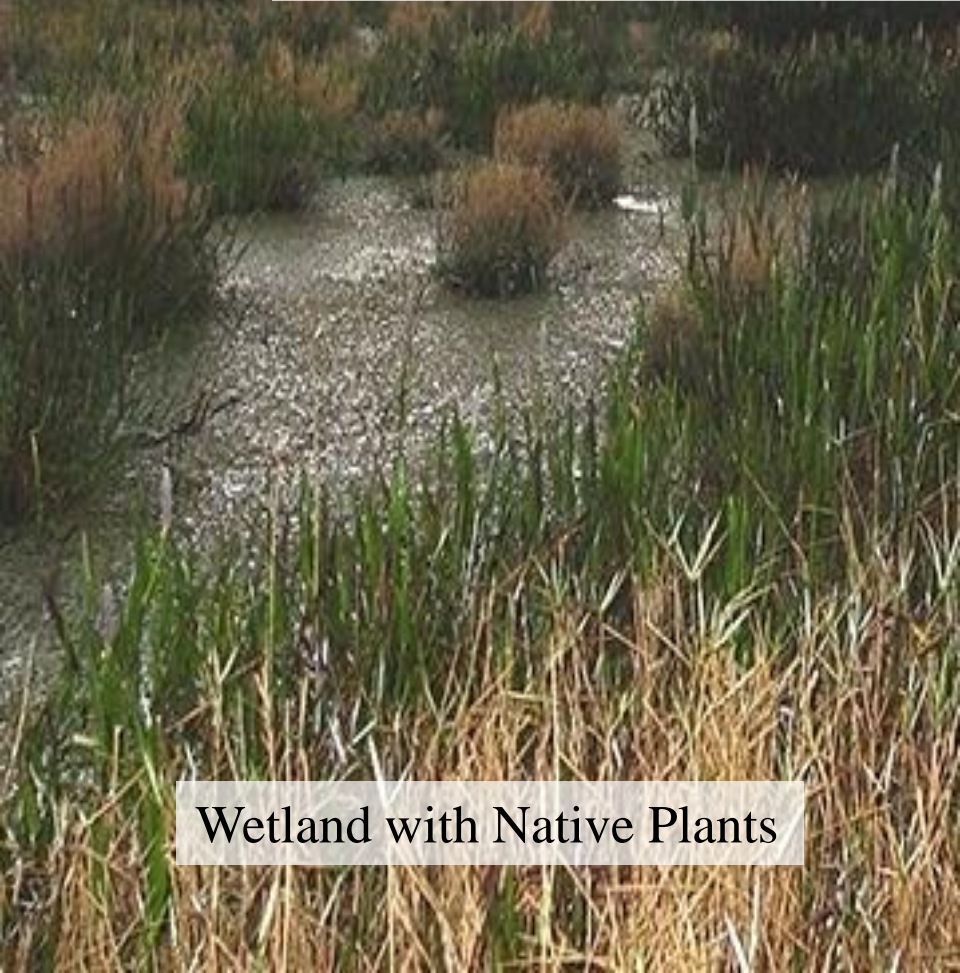
**Drag-way**



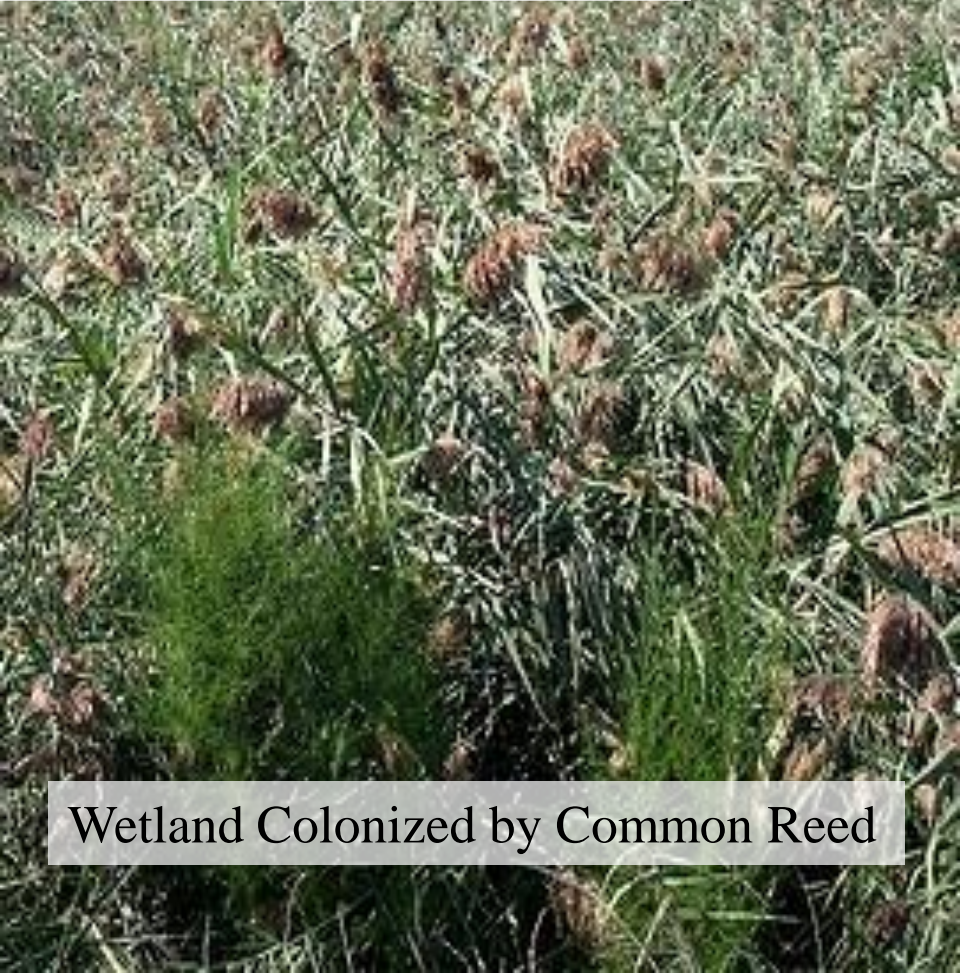
# Invasive Plants

## Common Reed (*Phragmites australis*)

- Fresh & brackish tidal and non-tidal marsh
- Listed as a severe threat in SC
- Single-species, dense colonies to 12-15 feet tall
- Greatly reduced plant diversity, wildlife use & human access



Wetland with Native Plants



Wetland Colonized by Common Reed



# Wetland Colonization by Chinese Tallow-tree

- Listed as severe threat in SC
- Creates nearly mono-species stands
- Out-competes native species
- Gradually dewateres wetlands
- Greatly diminishes wildlife value

## **Control with Herbicides**

- 440-acre N Williman Island
- Several 1000 trees
- 12 Trips = 231.5 man-hr





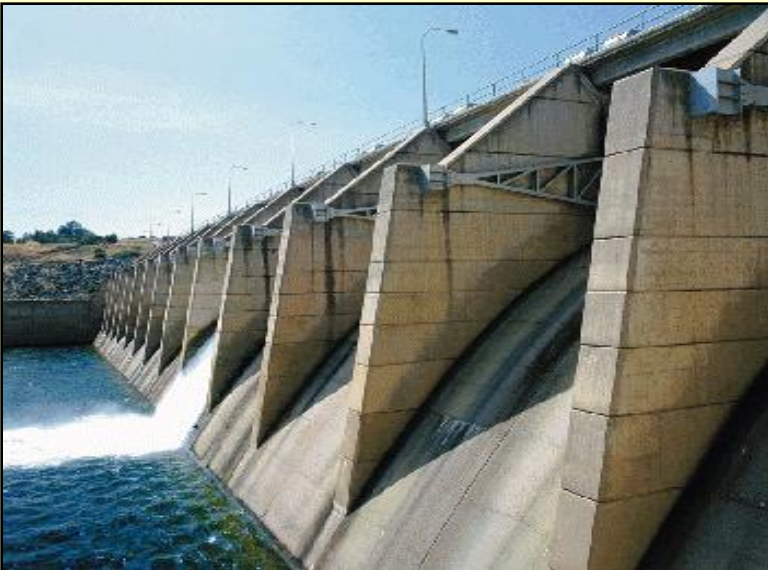
# Other Human Impacts



**Drainage**



**Irrigation Withdrawal**



**Dams**



**Municipal & Industrial Water**



**Questions?**

